

CLAIMS

- 1764
1. A method for producing town gas comprising the steps of;
 - (A) preparing dimethyl ether as feed stock;
 - (B) evaporating said dimethyl ether and;
 - (C) reforming said dimethyl ether with steam in the presence of catalyst to produce reformed gas containing mainly methane.
 2. A method for producing town gas according to claim 1, in which quantity of said steam on reforming is within 10/1 to 0.5/1 molar ratio of steam/dimethyl ether.
 3. A method for producing town gas according to claim 1, in which temperature for catalytic reforming of said dimethyl ether is within 200 °C to 600 °C.
 4. A method for producing town gas according to claim 1, in which said dimethyl ether is supplied to serially installed adiabatic fixed bed reactors by one of the following manners;
 - ① Passing cooling means installed between said reactors, said dimethyl ether is supplied serially to said reactors; and
 - ② A part of divided dimethyl ether is supplied to said reactors serially, and at the same time, the remaining part of said divided dimethyl ether is supplied to subsequent reactor or reactors.
 5. A method for producing town gas according to claim 1, in which said dimethyl ether is reformed with a fluidized bed reactor or a multi-tubular reactor.
 6. A method for producing town gas according to claim 1, in which carbon dioxide by-produced on reforming process of said dimethyl ether is removed from said reformed gas after reforming said dimethyl ether.
 7. A method for producing town gas according to claim 6, in which said carbon dioxide is removed from said reformed gas by using one of the following manners;
 - ① Absorption by aqueous alkanolamine solution or heated aqueous potassium carbonate solution;

- ② Adsorption by pressure swinging method;
- ③ Selective separation by membrane.

8. A method for producing town gas according to claim 6, in which hydrogen, carbon monoxide and carbon dioxide, which are by-produced on said reforming process, are methanized either before or after removing said carbon dioxide.

9. A method for producing town gas according to claim 1, in which a part of said dimethyl ether is added to said reformed gas as carburant.